

## **C&I 975: Model-Based Inquiry in Science and Science Education**

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During the past decade or so there has been a resurgence of interest in inquiry among science educators. At the same time the role of models in science has been the focus of the writing of many philosophers of science and scientists themselves. This interest in models has now begun to attract the attention of science educators. In this seminar course we will become familiar with a broad range of literature on inquiry and models in science and science education. One expectation is that, by doing so, we will be in a better position to evaluate assertions about models and inquiry that continue to find their way into the science education literature. Another expectation is that we will develop a coherent and grounded framework from which to think about implementing model-based inquiry experiences for our students.

There are three related areas that we will explore, (though not necessarily with equal time devoted to each):

1. Views on inquiry and models in the science education literature.
2. Views on inquiry and models within the science and science studies literatures
3. Research on teaching and learning in classrooms where inquiry and/or models are central.

The assignments/expectations for the seminar include (additional information on each will be provided):

- Active participation in the discussions of readings.
- Participation in the development of a typology for the concepts of model and inquiry.
- Analyze a pre-college textbook or other instructional material for perspectives on inquiry and/or models.
- Review a book (from a list provided) on inquiry and/or models
- Write a paper on some aspect of inquiry and/or models that is of relevance to the teaching situation that you are in or that you are likely to find yourself in. It would be possible to develop some model-based inquiry instruction for this assignment.

All readings will be provided or will be in one of the seminar/course books that are available at the University Book Store.